



## Frequently Asked Questions about Ricin

### **Is ricin poisonous? How does it make people sick?**

Ricin is a highly poisonous protein made from castor beans. Human cells need proteins to live. Ricin gets inside the cells of a person's body and prevent the cells from making proteins. Eventually this is harmful to the whole body. Death may occur. Ricin can come in the form of a powder, mist or pellet. It can be dissolved in water or a weak acid.

Information about ricin poisoning in humans is limited. Most of what we know comes from animal studies and only a few human cases.

Ricin powder can be inhaled like anthrax. But as far as we know, no human cases of ricin inhalation have ever been reported. Most ricin poisonings have occurred when the ricin was injected or swallowed.

### **What are the symptoms of ricin poisoning?**

The symptoms depend on the route (inhalation, injection, ingestion), the amount and the length of exposure.

**Inhalation** (breathing in) of ricin may lead to symptoms within eight hours of exposure. Within a few hours of inhaling ricin, likely symptoms would be difficulty breathing, cough, nausea and tightness in the chest.

Heavy sweating may follow as well as fluid building up in the lungs (pulmonary edema). Fluid in the lungs would make breathing even more difficult, and the skin might turn blue.

Excess fluid in the lungs would be diagnosed by x-ray, or by listening to the chest with a stethoscope. Finally, low blood pressure and respiratory failure may occur, leading to death.

People who have inhaled ricin should seek medical attention. Symptoms are very unlikely to being more than 24 hours after exposure.

**Ingestion** (swallowing) of ricin would typically cause symptoms to occur in less than six hours. If someone swallows a significant amount of ricin, he or she would develop vomiting and diarrhea that may become bloody.

Severe dehydration may result, followed by low blood pressure. Other signs or symptoms may include hallucinations, seizures and blood in the urine. Within several days, the person's liver, spleen and kidneys might stop working, and the person could die.

It is extremely unlikely that the onset of signs and symptoms of ricin poisoning by ingestion would occur more than 10 hours after exposure.

**Skin or eye exposure** can occur when a person comes in contact with ricin in powder or mist form. Symptoms include redness and pain of the skin and the eyes.

**What should I do if I feel I'm experiencing symptoms of ricin exposure?**

Seek medical attention right away.

**Is it true that there is no antidote for ricin? What can be done to help people who have been exposed to ricin? Are treatments available?**

Because no antidote exists for ricin, it is important to avoid ricin exposure in the first place. If exposure cannot be avoided, it is important to get the ricin off or out of the body as quickly as possible.

Ricin poisoning is treated by giving victims supportive medical care. Medical care for people who have been exposed to ricin include:

- Helping with breathing
- Administering intravenous fluids (fluids that are given through a needle inserted into a vein)
- Prescribing medications to treat conditions such as seizure and low blood pressure
- Flushing the stomach with activated charcoal
- Washing the eyes with water.

**Has anyone ever died after being exposed to ricin?**

Yes, several deaths have resulted after victims were injected with ricin. People have also been poisoned with ricin after eating castor beans. Death from ricin poisoning could take place within 37 to 72 hours of exposure. If death has not occurred in three to five days, the victim usually recovers.

**Is ricin poisoning contagious?**

No, ricin poisoning is not contagious. It cannot spread from person to person.

**What are the long-term effects of ricin exposure?**

No long-term direct effects are known to exist from ricin exposure that did not result in symptoms. Following severe ricin poisoning, the damage done to vital organs may be permanent or have lasting effects.

**Are certain populations more vulnerable to the health effects of ricin exposure, such as children, pregnant women, the elderly, people who are immunocompromised, or people with respiratory or gastrointestinal (GI) tract illnesses?**

Although it is unknown whether these populations are at higher risk, it is possible. People who have existing illnesses of the respiratory or GI tract may have pre-existing tissue irritation or damage as a result of their illness. If this damaged or irritated tissue is exposed to ricin, the result may be further injury and greater absorption of the ricin toxin.

**If I was present where ricin was located, could I carry it home? Are my house and my family safe?**

If ricin was released into the air, some ricin might get onto the clothing of people who were present. It could then be transported on the clothing to their homes. The amount of ricin that would get onto your clothing and transported home would probably not be enough to cause health problems for you or your loved ones.

Any exposed clothing should be handled according to the general guidelines given in the "Personal Cleaning and Disposal of Contaminated Clothes" guidelines posted at [www.bt.cdc.gov/planning/personalcleaningfacts.asp](http://www.bt.cdc.gov/planning/personalcleaningfacts.asp).

**Where can I find information about personal protective equipment and cleanup for ricin?**

See the National Institute for Occupational Safety and Health emergency response card available at [www.bt.cdc.gov](http://www.bt.cdc.gov).

**How dangerous is ricin?**

The Centers for Disease Control and Prevention (CDC) has recognized ricin as an agent that may be used for bioterrorism.

**How is New Jersey prepared to monitor potential ricin exposures?**

The New Jersey Department of Health and Senior Services Public Health Environmental Laboratories test environmental samples of an unknown origin that are viewed as credible bioterrorist threats.

**What is the public health system in New Jersey doing to prepare for a possible biological attack?**

New Jersey and the CDC are working together to prepare for all potential health hazards, including bioterrorism.

Activities include:

- Developing plans and procedures to respond to biological attacks
- Training and equipping emergency response teams, gathering samples and performing tests to help state and local governments control infection.
- Educating healthcare providers, the media and the general public about what to do in the event of an attack
- Working closely with local health departments, veterinarians and laboratorians to monitor for suspected cases of bioterrorism
- Working with hospitals, laboratories, emergency response teams and healthcare providers to make sure they have the supplies they need in the event of an attack.

**Where can I get more information?**

- Your healthcare provider
- Your local department of health
- The New Jersey Department of Health and Senior Services
  - Website – [www.nj.gov/health](http://www.nj.gov/health)
  - DHSS Communicable Disease Service at (609) 588-7500
- CDC
  - [www.bt.cdc.gov/agent/ricin](http://www.bt.cdc.gov/agent/ricin)
  - 1-800-CDC-INFO (4636) for assistance in English and Spanish – TTY 1-888-232-6348
  - E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)